

REMARKS

The present application includes claims 1-52. Claim 1 was amended so as to broaden the claim. Claims 50-52 are new and include limitations removed from claim 1. Claims 1, 2, 4, 10, 16, 19, 22, 24, 28 and 29 were amended. Minor typographical errors were corrected in claims 4, 10, 16 and 22.

Applicants thank the Examiner for indicating claims 7-17, 20-22, 24-27, 29-31, 33-39 and 45 as being allowable in independent form.

Claim 19 stands rejected as lacking sufficient antecedent basis. Claim 19 was amended to clarify the claim.

Claim 1 stands rejected under 35 USC § 103(a) as being unpatentable over Argiro (US patent 6,219,059) in view of Derbin et al. (US patent 5,381,518). Applicant respectfully disagrees with the rejection. Claim 1 was amended to broaden the claim by removing non-essential features from the claim.

Argiro briefly discusses the well known raycasting method in its background (column 2, lines 25-38). Derbin describes a two stage process. In a first stage (column 7, line 44 – column 11, line 35), opacity and color values are assigned to the voxels of the three dimensional space to be reconstructed. In a second stage (column 11, line 37- column 13, line 31), a two dimensional image is reconstructed from the three dimensional space, using a concatenated filter method.

Claim 1 requires forming a rendering based on ray storage values (g), determined for respective rays raycasted into the voxel space (a). Each ray storage value is calculated by accumulating values associated with boundaries between material classes (e) in addition to accumulating the effect of opacity at sampling points along the ray (b).

The Examiner did not establish a *prima facie* case of obviousness with regard to claim 1, since neither Argiro nor Derbin teaches or suggests accumulating values associated with boundaries between classes (e) in raycasting. The fact that Derbin classifies the materials of the image volume, does not suggest accumulating a visualization value associated with a boundary into the ray storage value of the ray. This is true, first of all, because Derbin does not suggest raycasting at all and has no reason to use raycasting after the classification procedure it performs before the rendering. In addition, Derbin uses the classification in determining the opacity and color values of the three dimensional space and not in the rendering of the two dimensional image. In the description (Derbin, column 11, line 37- column 13, line 31) of the two-dimensional image

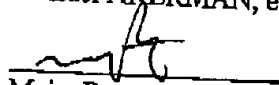
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rendering (which is required by (g) in claim 1), there is no mention of the boundaries or of the materials which the voxels represent.

The dependent claims add additional patentability to claim 1. Some of these claims were indicated by the Examiner as allowable. Applicants are of the opinion that other dependent claims also include allowable features. However, due to the irrelevance of the cited art to the patentability of independent claim 1, applicants are not arguing the patentability of the dependent claims. They are patentable at least because they depend on claim 1, which is believed to be patentable.

In view of the above remarks, applicants submit that the claims are patentable over the prior art. Allowance of the application is respectfully awaited. If, however, the Examiner is not convinced and the Examiner is of the opinion that a telephone conversation may forward the present application toward allowance, applicants respectfully request that the Examiner call the undersigned at 1 (877) 428-5468. Please note that this is a direct *toll free* number in the US that is answered in the undersigned's Israel office. Israel is 7 hours ahead of Washington.

Respectfully submitted,  
Shmuel AKERMAN, et al.

  
Maier Fenster,  
Reg. No. 41,016

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William H. Dippert, Esq.  
Reed Smith LLP  
599 Lexington Avenue, 29<sup>th</sup> Floor  
New York, NY 10022-7650

Tel.: (212) 521-5400